



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/529,369

10/05/2005

Hiroshi Matsutani

1303.44954X00

4784

20457

7590

04/07/2008

ANTONELLI, TERRY, STOUT & KRAUS, LLP  
1300 NORTH SEVENTEENTH STREET  
SUITE 1800  
ARLINGTON, VA 22209-3873

EXAMINER

ZIMMER, MARC S

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

04/07/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/529,369	<b>Applicant(s)</b> MATSUTANI ET AL.	
	<b>Examiner</b> MARC S. ZIMMER	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 and 21-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-19 and 21-29 is/are rejected.
- 7) ☒ Claim(s) 4-6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

The rejections involving JP 2002-155144 as the primary basis for rejection are hereby withdrawn. This reference does not contemplate the employment of the copolymers described therein as candidates for forming dielectric films and, therefore, Applicant is correct in stating that the impetus for removing the platinum catalyst doesn't exist. However, the Examiner believes that the other references, Monkiewicz aside, together still represent a proper foundation for rejection. (*Monkiewicz* was really only relied upon to address the limitations of a couple of claims and the Examiner has found new prior art to replace *Mokiewicz*.)

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 13-14, 16-19, and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over the abstract entitled "Evaluation of Low-k Polymer Film containing Borazine Unit" authored by Uchimaru et al. and published in Extended Abstracts (the 62<sup>nd</sup> Autumn Meeting, 2001); *The Japan Society of Applied Physics and Related Societies*, September 11-14, 2001, pg. 656 in view of Kirner et al., U.S. Patent Application Publication No. 2003/0224156 or Mercer et al., U.S. Patent # 5,179,188 for the reasons outlined previously.

Claims 1-3, 13-14, 16-19, and 24-26 rejected under 35 U.S.C. 103(a) as being unpatentable over the abstract for an article entitled "Borazine-Siloxane Polymer and it's

Application” authored by Inoue et al. and published in the Proceedings of the Symposium on Semiconductors and Integrated Circuits Technology, 2002, 63, pg. 96-101 in view of Kirner et al., U.S. Patent Application Publication No. 2003/0224156 or Mercer et al., U.S. Patent # 5,179,188 for the reasons outlined previously.

Claims 10 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Uchimarū abstract, Kirner, and Mercer as applied to claims 1-3, 13-14, and 20 above, and further in view of *Montegi* et al., U.S. Patent # 5,115,069 for the reasons outlined previously.

Claims 10 and 27-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue, Kirner, and Mercer as applied to claims 1-3, 13-14, and 20 above, and further in view of *Montegi* et al., U.S. Patent # 5,115,069 for the reasons outlined previously.

Claims 8, 9, 11, 12, 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Uchimarū abstract, Kirner, and Mercer as applied to claims 1-3, 13-14, and 20 above, and further in view of Kobayashi et al., U.S. Patent # 6,376,601. To reiterate, it is acknowledged that neither *Kirner* nor *Mercer* teach an approach for removing the metal impurities inherently present in the invention to *Uchimarū*. Further, to the extent that both of these references disclose the employment of different materials as the dielectric polymer and, thus, would likely contain different impurities, the skilled artisan would not rely on any teachings therein for the removal of the platinum metal impurity present in *Uchimarū*. Instead, the skilled artisan would consult the prior art directed to solving the problem of the removal of platinum hydrosilylation

Art Unit: 1796

catalysts such as those contemplated by *Uchimaru*. In this connection, '601 discloses optical greases/oils that are prepared using a hydrosilylation approach. Because they are used in applications that require high clarity, it is desirable that they be devoid of the hydrosilylation catalysts used in their synthesis. The reference, therefore, advocates the employment of supported catalysts that can easily be isolated by filtration subsequent to reaction. See column 4, lines 29-43. Of course, the skilled artisan approaching the problem of removing platinum catalyst from the polymer of *Uchimaru et al.* would appreciate that this methodology could also be extended to that invention.

Claims 8, 9, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Inoue*, *Kirner*, and *Mercer* as applied to claims 1-3, 13-14, and 20 above, and further in view of *Kobayashi et al.*, U.S. Patent # 6,376,601.

*Kobayashi* is relevant for the same reasons mentioned earlier.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-3 are rejected on the ground of nonstatutory double patenting over claims 1-19 of U. S. Patent No. 6,924,545 ('425) in view of the relevant teachings taken from Kirner and Mercer cited hereinabove since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter.

Claims 1 and 2 provisionally rejected on the ground of nonstatutory double patenting over claims 13 and 20 of copending Application No. 10/809,704 in view of the relevant teachings taken from Kirner and Mercer cited hereinabove. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter.

### ***Response to Arguments***

First, concerning Applicant's declaration, the Examiner respectfully submits that it is not all useful as a means of overcoming the prior art rejections of record because the declaration does not compare that which is taught by the proposed combinations with

Applicant's invention. Indeed, neither *Motegi* nor *Kobayashi* mentions a re-precipitation approach for purifying the polymer.

Section MPEP 716.02(e) instructs that, “an affidavit or declaration under 37 CFR 1.132 must compare the claimed subject matter with the closest prior art to be effective to rebut a prima facie case of obviousness. *In re Burckel*, 592 F.2d 1175, 201 USPQ 67 (CCPA 1979). “Evidence of unexpected properties may be in the form of a direct or indirect comparison of the claimed invention with the closest (for emphasis) prior art which is commensurate in scope with the claims.” *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). “Where there are deviations from the closest prior art, they must 1) be explained and 2) shown unlikely to influence the outcome of the comparison. *In re Finley*, 81 USPQ 383; *Ex Parte Armstrong*, 126 USPQ 281; *In re Widmer*, 147 USPQ 518; *In re Magerlein*, 202 USPQ 473. In the alternative, “Applicants may compare the claimed invention with prior art that is more closely related to the invention than the prior art relied upon by the examiner.” *In re Holladay*, 584 F.2d 384, 199 USPQ 516 (CCPA 1978).

The Examiner is cognizant that not all purification techniques are equally effective at isolating a specific impurity. However, the techniques disclosed by *Motegi* and *Kobayashi* contemplate the employment of precisely the same approach for removing the catalyst component and, thus, the skilled artisan could be assured that the residual amounts of catalyst remaining will be no higher than that mandated by the claims.

It is further noted that one strategy used by Applicant to argue the patentability of the claims over the prior art of record is to attack the references individually. For instance, Applicant emphasizes that Mercer actually teaches against the utilization of a catalyst. The Examiner wishes to point out that, were this true, it would only impact the patentability of the process claims, not the product claims. In any case, the Examiner only cited this reference as a means of supporting his contention that it was well-known that the exclusion of metal impurities from a dielectric composition was already recognized as being desirable. That Mercer et al. contemplate preparing their dielectric material in the absence of a catalyst is immaterial because they disclose the use of a completely different polymer where the avoidance of a catalyst in its preparation. The same cannot be said of the polymer taught by Uchimaru and Inoue and, insofar as a catalyst is required, one of ordinary skill would be attempting to identify ways to remove the catalyst in light of the well-known premise that the catalyst would have a deleterious effect on the dielectric constant. That this premise is well-known is evidenced at least in part by the teachings of Mercer and Kirner.

One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Regarding the Applicant's repeated assertion that the references alone or in combination fail to teach either the Young's modulus or leak current limitations of the claims, these properties are a function of polymer structure and the absence of metal



impurities respectively. Insofar as the inventions realized upon combining the aforementioned references are identical including the result of low metal content upon carrying out the catalyst isolation techniques taught by Kobayashi and Montegi, these properties are inherently satisfied. "Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). See also *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). "Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established."

Concerning the double patenting rejections, the aforementioned patent and application are, in fact, commonly assigned but have different inventive entities. Most of the remaining arguments posed are much the same as are those given when addressing the prior art rejections and are rebutted by the same points set out hereinabove.

#### ***Allowable Subject Matter***

Claims 4-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARC S. ZIMMER whose telephone number is (571)272-1096. The examiner can normally be reached on Monday-Friday 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jim Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

April 2, 2008

/Marc S. Zimmer/  
Primary Examiner, Art Unit 1796